

Listing of claims:

1. (Previously Presented) A processor comprising:

means for executing an instruction of an application of a first bit size ported to a second bit size environment, the second bit size being greater than the first bit size; and

means for confining the application to an address space subset of the first bit size, said means for confining comprising:

means for truncating generated address references of the second bit size to the first bit size;

means for determining that the address space subset of the first bit size is signed address space or unsigned address space based on a setting of an address format control signal, the address format control signal having a first setting to indicate unsigned address space and a second setting to indicate signed address space; and

means for extending to the second bit size the truncated generated address references based on results from said means for determining, zero-extending the truncated generated address references if the address space subset of the first bit size is unsigned and sign-extending the truncated generated address references if the address space subset of the first bit size is signed.

2. (Original) The processor of claim 1, wherein the first bit size is 32-bit and the second bit size is 64-bit.

3. (Cancelled)

4. (Previously Presented) The processor of claim 1, wherein the means for confining includes means for generating an address fault.

5. (Cancelled)

6. (Cancelled)

7. (Previously Presented) A processor comprising:

a memory to store an instruction of an application ported from a first bit size environment to a second bit size environment, the second bit size being greater than the first bit size; and

an instruction execution core coupled to said memory, said instruction execution core to execute the instruction of the application, said instruction execution core to

determine that the application is confined to an address space subset of the first bit size;

generate an address reference of the second bit size as part of execution of the instruction;

truncate the generated address reference from the second bit size to the first bit size;

determine that the address space subset of the first bit size is signed address space or unsigned address space based on a setting of an address format control flag, the address format control flag having a first setting to indicate unsigned address space and a second setting to indicate signed address space;

zero extend the truncated, generated address reference to the second bit size if the address space subset of the first bit size is determined to be unsigned address space; and

sign extend the truncated, generated address reference to the second bit size if the address space subset of the first bit size is determined to be signed address space.

8. (Original) The processor of claim 7, wherein the application ported from a first bit size environment to a second bit size environment is an application ported from a 32-bit environment to a 64-bit environment.

9. (Previously Presented) The processor of claim 7, wherein the instruction execution core is to determine that the application is confined to the address space subset of the first bit size based at least in part on an address space control flag.

10. (Cancelled)

11. (Previously Presented) The processor of claim 7, wherein the instruction execution core is to generate an address fault flag based at least in part on a comparison of the generated address reference and the extended, truncated, generated address reference.

12. (Previously Presented) The processor of claim 11, wherein the instruction execution core is to generate the address fault flag only if:

the comparison of the generated address reference and the extended, truncated, generated address reference indicates that the compared addresses are different, and

an address fault control flag specifies to check for an address fault.

13. (Original) The processor of claim 7, wherein said memory is a cache memory.

14. (Original) The processor of claim 7, wherein the processor is a 64-bit processor.

15. (Previously Presented) A method comprising:

determining that an application is confined to an address subset of a first bit size, the application including an instruction;

generating an address reference of a second bit size as part of execution of the instruction;

truncating the generated address reference from the second bit size to the first bit size;

determining that the address space subset of the first bit size is signed address space or unsigned address space based on a setting of an address format control flag, the address format control flag having a first setting to indicate unsigned address space and a second setting to indicate signed address space;

zero-extending the truncated, generated address reference to the second bit size if the address space subset of the first bit size is determined to be unsigned address space; and

sign-extending the truncated, generated address reference to the second bit size if the address space subset of the first bit size is determined to be signed address space.

16. (Cancelled)

17. (Previously Presented) The method of claim 15, wherein the application is ported from a 32-bit environment to a 64-bit environment.

18. (Currently Amended) The method of claim 15, wherein said determining that an the application is confined to the address subset of the first bit size is based at least in part on an address space control flag.

19-21. (Cancelled)

22. (Previously Presented) The method of claim 15, further comprising:
generating an address fault flag based at least in part on a comparison of the generated address reference and the extended, truncated, generated address reference.

23. (Previously Presented) The method of claim 22, wherein generating the address fault flag is further based in part on an address fault control flag, wherein the address fault flag is generated only if:

the comparison of the generated address reference and the extended, truncated, generated address reference indicates that the compared addresses are different, and

an address fault control flag specifies to check for an address fault.

24. (Previously Presented) The processor of claim 4, wherein said means for generating the address fault comprises:

means for comparing a generated address reference as input into said means for truncating with an extended, truncated, generated address reference as output by said means for extending,

wherein said means for generating the address fault outputs that an address fault has occurred only if:

an output of said means for comparing indicates that the compared addresses are different, and

an address fault control signal specifies to check for the address fault.

25. (Previously Presented) The processor of claim 2, wherein the unsigned address space is 4 gigabytes and the signed address space is -2 gigabytes to +2 gigabytes.

26. (Previously Presented) The processor of claim 8, wherein the unsigned address space is 4 gigabytes and the signed address space is -2 gigabytes to +2 gigabytes.

27. (Previously Presented) The processor of claim 12, wherein the instruction execution core is to generate the address fault flag if:

the application is confined to the address space subset of the first bit size,

the comparison of the generated address reference and the extended, truncated, generated address reference indicates that the compared addresses are different, and

the address fault control flag specifies to check for the address fault.

28. (Previously Presented) The method of claim 17, wherein the unsigned address space is 4 gigabytes and the signed address space is -2 gigabytes to +2 gigabytes.